

Engineering Design and Presentation I

Course Credit: 1.0

Pre-requisite: Algebra I & Principles of Applied Engineering
2024-2025

Kibler



Instructor: Dr. Kibler

Class: D101

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Course Description: GRADES 10,11,&12 LENGTH: YEAR LONG

Engineering Design and Presentation I is a continuation of knowledge and skills learned in Principles of Applied Engineering. Students enrolled in this course will demonstrate knowledge and skills of the design process as it applies to engineering fields using multiple variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and what is required to gain and maintain employment in these areas. Students shall be awarded one credit for successful completion of this course.

Course Content and Outline:

Engineering Design is a hands-on, project-based course that engages students' knowledge and skills of the process of design as it applies to engineering fields, using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students become adept with college and industry Autodesk software to design and document solutions for course projects.

Students will perform research to choose, validate, and justify a technical problem. After carefully defining the problem, teams of students will design, build, and test their solution. While progressing through the engineering design process, students will work closely with experts and will continually hone their organizational, communication and interpersonal skills, their creative and problem-solving abilities, and their understanding of the design process.

The projects that students will work on will vary based on student interests as the curriculum focuses on problem solving and critical thinking. EDP is appropriate for students who are interested in any technical career path.

Engineering Design and Presentation I course of study includes:

- Exploration of the STEM Field of Engineering Design
- Workplace Readiness Skills in the STEM Field
- Teamwork in STEM
- Safety Precautions
- Drafting and Design
- Engineering Design Methodologies
- Solve Engineering Design Problems
- Product Design Processes and Techniques

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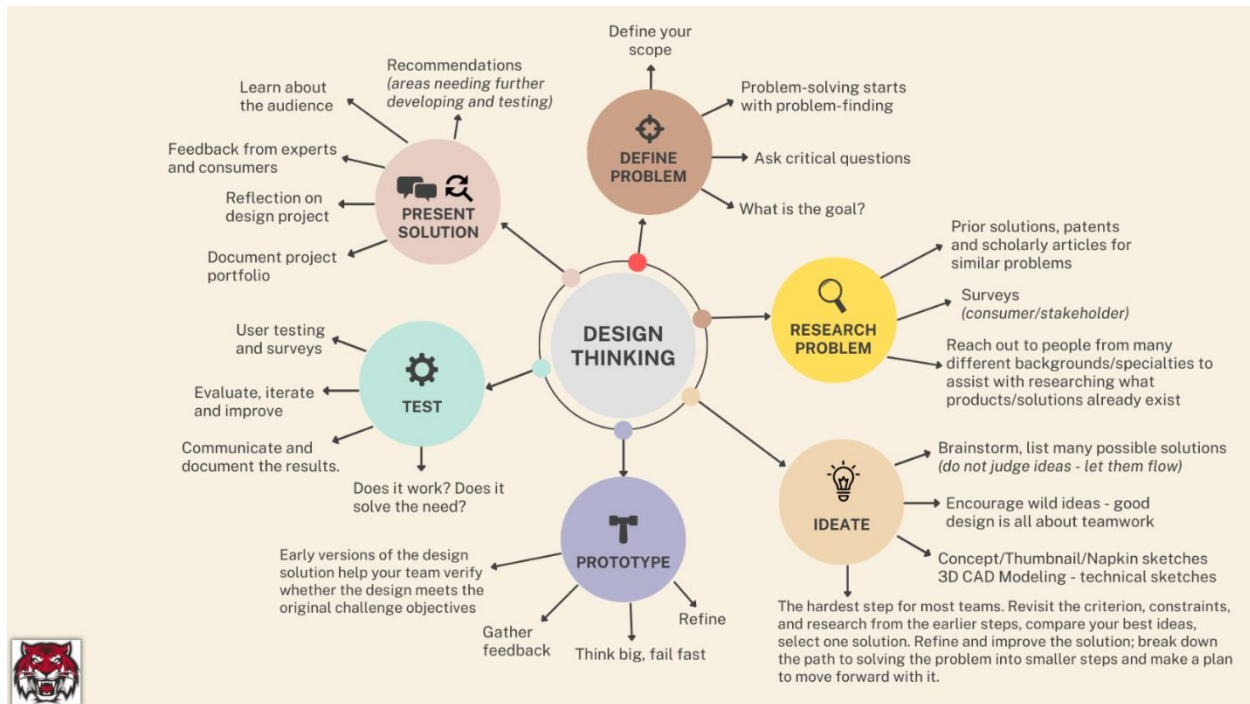
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- Building a Prototype
- Project Management
- Employability Skills
- Extended Learning Experience



General Course Objectives:

- Students will demonstrate proper use and care of equipment.
- Students will study and practice techniques of engineering and design as used in industry.
- Students will be encouraged to function at their highest level of efficiency regarding neatness and accuracy. Time management skills in engineering will also be emphasized.
- Students will be evaluated constantly as engineering assignments are completed.
- Students will keep an Engineering Notebook of completed designs and problem-solving activities.

Books, Supplies, and Supplementary Materials: There is no textbook for this course. All reference materials are electronic and will be available via Schoology.

Students are responsible for acquiring the following BY THE START OF THE 2ND WEEK OF

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CLASS:

1. 1 – Quad Ruled Engineering notebook. This book is a MAJOR component of grading for this course. You can find it at Office Depot, Staples, or online. It MUST be a notebook NOT a binder with loose quad-papers.
 2. Pen (blue/black) and #2 pencil (mechanical pencils accepted). In your notebooks, Drawings and Annotations in this course will be in pencil.
 3. (*Optional*) – a USB thumb drive. However, you will have access to FBISD OneDrive to save all your coursework. Saving your work in FBISD OneDrive is highly recommended.
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Classroom Expectations:

- Show respect to yourself, your peers and teachers. Have pride in the way you conduct yourself. I will show you as much respect as you show me.
 - Come everyday with a positive attitude, ready to participate in class.
 - Be prepared for class. Handle your business before entering my class.
 - Be polite, clean your area and push your chair in before you leave.
 - Take responsibility for your actions.
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Teaching Methods:

Activities – are a method of instruction that involves directed teaching of a processes or procedures. Activities engage students in learning skills that are later applied in more complex situations.

Project-based learning – comprehensive approach to instruction that presents a project or relevant activity that enables students to synthesize received knowledge and to individually resolve problems in a curricular context. Students are expected to document their work independently in their journal and communicate their solutions to their peers and members of the professional community.

Cheating:

Make choices with honesty and integrity and allow yourself time to do your work so you do not have to compromise your integrity. High school is as much about implementing time management with discipline as it is learning about academics. Both are valuable assets to your future success. If your behavior leads me to believe you are cheating, you are more than likely cheating.

- Cheating includes letting others copy your answers on homework, classwork, or any other type of assignment. Notice that there is a difference between supporting another student while doing homework and flat out copying their work. Tutoring others is beneficial but enabling a student to not learn by allowing them to copy your work is unacceptable.

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- Cheating is sharing test questions/ answers with other classes. Doing this compromises the integrity of the test.
 - Cheating is taking pictures of other student's work, the teacher's power points, tests, quizzes, and then distributing to others and copying it as your own.
 - Cheating is using your phone or online resources for answers when it is not permitted.
 - Cheaters get zeros! No second chances!
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Assessment and Grading Policy:

The evaluation of projects needs to be on going and cumulative with the use of performance, portfolio, test and self-report assessments. Evaluators can be teachers, students, or outside experts. These assessments need to be check marks of how the students are meeting the standards set in the course and help direct the accomplishment of the project itself.

Elements/Presentations/Submissions – points will vary with assignments.